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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,707	07/13/2007	Jun Hirano	L8638.06116	3097
52989	7590	06/08/2010	EXAMINER	
Dickinson Wright PLLC			ZHOU, YONG	
James E. Ledbetter, Esq.				
International Square			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,707	HIRANO ET AL.	
	Examiner	Art Unit	
	YONG ZHOU	2477	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 13 July 2007.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-45 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-45 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 13 July 2007 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 9, 10, 12, 13, 24, 25, 27, 28, 38, 39, 44 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Venkitaraman, Narayanan et al. (US 2003/0161287, hereinafter Venkitaraman).

Regarding claims 9 and 24, Venkitaraman teaches a dynamic network management apparatus placed in a mobile node capable of participating in a mobile network formed by a mobile access router (Fig. 1 #110-116, [0009], lines 4-13, wherein the mobility management responsibility is placed in the mobile node attached in a mobile network formed by a mobile router), comprising:

a connection means for connecting a certain router residing in the mobile network (Fig. 1, #110-116, [0019], lines 2-5, wherein the a mobile network comprises a mobile router attached by links to one or more mobile nodes),

a sending means for sending information to request for a global address of the mobile access router to the router when the mobile node does not know the global

address of the mobile access router, the information being forwarded by the router connected via the connection means to the mobile access router (Fig. 1, #112-116, Fig. 11, #1102, [0027], lines 1-14, [0048], lines 1-4, wherein the mobile node does not know its location and sends a router solicitation message to the mobile router via the network links; the router solicitation message requests for information about the mobile router it is attached), and

a response information receiving means for receiving response information including the global address of the mobile access router sent from the mobile access router as a response to the information sent by the sending means (Fig. 11, #1104-1106, [0048], lines 4-9, [0049], lines 1-6, wherein the mobile node receives the home address of the mobile router which is sent by the mobile router in response to the router solicitation received from the mobile node).

Regarding claims 10 and 25, Venkitaraman teaches a dynamic network management apparatus placed in a mobile node capable of participating in a mobile network formed by a mobile access router (Fig. 1 #110-116, [0009], lines 4-13, wherein the mobility management responsibility is placed in the mobile node attached in a mobile network formed by a mobile router), comprising:

a connection means for connecting a certain router residing in the mobile network (Fig. 1, #110-116, [0019], lines 2-5, wherein the a mobile network comprises a mobile router attached by links to one or more mobile nodes),

an sending means for sending information indicating that the mobile node does not know a global address of the mobile access router to the router when the mobile

node does not know the global address of the mobile access router, the information being forwarded by the router connected via the connection means to the mobile access router (Fig. 11, #1102, [0027], lines 1-14, [0048], lines 1-4, wherein the mobile node mobile node does not know its location and sends a router solicitation message to the mobile router via the network links; the router solicitation message requests information about the mobile router it is attached), and

a response information receiving means for receiving response information including the global address of the mobile access router sent from the mobile access router as a response to the information sent by the sending means (Fig. 11, #1104-1106, [0048], lines 4-9, [0049], lines 1-6, wherein the mobile node receives the home address of the mobile router which is sent by the mobile router in response to the router solicitation received from the mobile node).

Regarding claims 12, 27, 38 and 44, Venkitaraman further teaches that the sending means sends information indicating that an access router option can be used in parallel with sending the information ([0022], lines 1-15, [0029], lines 1-11, [0045], lines 12-15, wherein the mobile node may obtain any number of care of addresses and updates its home agent and correspondent nodes home address of its attached mobile router; upon receiving packets destined for an attached mobile network, sends binding updates to the correspondent nodes in parallel identifying its location).

Regarding claims 13, 28, 39 and 45, Venkitaraman further teaches a packet creating means for creating a special packet representing the information, and being so

arranged that the sending means sends the special packet created by the packet creating means ([0027], lines 1-7, wherein the mobile node creates and sends binding update message to correspondent nodes identifying its point of attachment).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 7, 11, 14-20, 22, 26, 29-33, 35, 37, 41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venkitaraman in view of Janneteau, Christophe et al. (US 7,430,174, hereinafter Janneteau).

Regarding claim 1, Venkitaraman teaches a dynamic network management system in a communication system including a mobile access router forming a mobile network and one or more mobile nodes residing in the mobile network (Fig. 1, #110-116, [0019], lines 2-5, wherein the a mobile network comprises a mobile router attached by links to one or more mobile nodes), so arranged that the mobile node sends information to request for a global address of the mobile access router (Fig. 11, #1102, [0048], lines 1-4, wherein the mobile node sends a router solicitation message asking for information about the mobile router it is attached), and then the mobile access router receiving the information from the mobile node, informs the mobile node about the global address of the mobile access router (Fig. 11, #1104-1106, [0048], lines 4-9,

[0049], lines 1-6, wherein in response to the router solicitation received from the mobile node, the mobile router informs the mobile node of the home address of the mobile router in a router advertisement message).

Venkitaraman does not expressly teach that a local fixed router attached to the mobile network relays information between the mobile router and the mobile node.

Janneteau teaches that nodes belonging to the mobile network include mobile router, local fixed nodes (host or router) and local mobile nodes and local fixed outer relays information between the mobile router and the mobile node (Fig. 1, #135, #165, Fig. 6, #235, #652, #657, col. 2, lines 10-14 and 35-37, col. 9, lines 35-44).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention to include a local fixed router in the mobile network to manage the mobility of the node that does not change its point of attachment to the mobile network (Janneteau, col. 2, lines 10-14).

Regarding claim 2, Venkitaraman teaches a dynamic network management system in a communication system including a mobile access router forming a mobile network and one or more mobile nodes residing in the mobile network (Fig. 1, #110-116, [0019], lines 2-5, wherein the a mobile network comprises a mobile router attached by links to one or more mobile nodes), so arranged that the mobile node which does not know a global address of the mobile access router, sends information indicating that the mobile node does not know the global address of the mobile access router (Fig. 11, #1102, [0027], lines 1-14, [0048], lines 1-4, wherein the mobile node does not know mobile router's address and sends a router solicitation message asking for information

about the mobile router it is attached), and then the mobile access router receiving the information from the mobile node, informs the mobile node about the global address of the mobile access router (Fig. 11, #1104-1106, [0048], lines 4-9, [0049], lines 1-6, wherein in response to the router solicitation received from the mobile node, the mobile router informs the mobile node of the home address of the mobile router in a router advertisement message).

Venkitaraman does not expressly teach that a local fixed router attached to the mobile network relays information between the mobile router and the mobile node.

Janneteau teaches that nodes belonging to the mobile network include mobile router, local fixed nodes (host or router) and local mobile nodes and local fixed outer relays information between the mobile router and the mobile node (Fig. 1, #135, #165, Fig. 6, #235, #652, #657, col. 2, lines 10-14 and 35-37, col. 9, lines 35-44).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention to include a local fixed router in the mobile network to manage the mobility of the node that does not change its point of attachment to the mobile network (Janneteau, col. 2, lines 10-14).

Regarding claim 3, Venkitaraman teaches a dynamic network management system in a communication system including a mobile access router forming a mobile network and one or more mobile nodes residing in the mobile network (Fig. 1, #110-116, [0019], lines 2-5, wherein the a mobile network comprises a mobile router attached by links to one or more mobile nodes).

Venkitaraman does not expressly teach that the mobile network node includes a local fixed router, and a global address of the mobile access router is stored in a predetermined information storing means in the local fixed router when the local fixed router receives information including the global address of the mobile access router, and the local fixed router informs the mobile node about the global address of the mobile access router stored in the predetermined information storing means.

Janneteau teaches that nodes belonging to the mobile network include mobile router, local fixed nodes (host or router) and local mobile nodes (Fig. 1, #135, #165, col. 2, lines 10-14 and 35-37), and the local fixed router receives a Care-of Router Advertisement message from the mobile router including the care of address of the mobile router which is extracted and stored at the local fixed router (Fig. 6, #235, #652, col. 9, lines 35-44), and the local fixed router then forwards the extracted care of address of the mobile router to the mobile node (col. 9, lines 42-45).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention to include a local fixed router in the mobile network to manage the mobility for nested mobile network including a node that does not change its point of attachment to the mobile network (Janneteau, col. 2, lines 10-14, col. 7, lines 56-59).

Regarding claims 4 and 19, Venkitaraman teaches a dynamic network management apparatus placed in a mobile access router capable of forming a mobile network (Fig. 1, #112, [0009], lines 4-9, wherein majority of the mobility management responsibility is placed in the mobile router), comprising:

a connection means for connecting one or more mobile nodes residing in the mobile network (Fig. 1, #110-116, [0019], lines 2-5, wherein the a mobile network comprises a mobile router attached by links to one or more mobile nodes),

an information detection means for detecting information to request for a global address of the mobile access router, the information being sent from a certain mobile node participating in the mobile network (Fig. 11, #1102, [0048], lines 1-4, wherein the mobile node sends a router solicitation message asking for information about the mobile router it is attached), and

a response information sending means for sending response information including the global address of the mobile access router to the mobile node which has sent the information through the local fixed router in order to inform the global address of the mobile access router when the information is detected by the information detection means (Fig. 11, #1104-1106, [0048], lines 4-9, [0049], lines 1-6, wherein in response to the router solicitation received from the mobile node, the mobile router informs the mobile node of the home address of the mobile router in a router advertisement message).

Venkitaraman does not expressly teach that a local fixed router attached to the mobile network relays information between the mobile router and the mobile node.

Janneteau teaches that nodes belonging to the mobile network include mobile router, local fixed nodes (host or router) and local mobile nodes and local fixed outer relays information between the mobile router and the mobile node (Fig. 1, #135, #165, Fig. 6, #235, #652, #657, col. 2, lines 10-14 and 35-37, col. 9, lines 35-44).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention to include a local fixed router in the mobile network to manage the mobility of the node that does not change its point of attachment to the mobile network (Janneteau, col. 2, lines 10-14).

Regarding claims 5 and 20, Venkitaraman teaches a dynamic network management apparatus placed in a mobile access router capable of forming a mobile network (Fig. 1, #112, [0009], lines 4-9, wherein majority of the mobility management responsibility is placed in the mobile router), comprising:

a connection means for connecting one or more mobile nodes residing in the mobile network (Fig. 1, #110-116, [0019], lines 2-5, wherein the a mobile network comprises a mobile router attached by links to one or more mobile nodes),

an information detection means for detecting information indicating that a mobile node does not know a global address of the mobile access router, the information being sent from the mobile node participating in the mobile network and not knowing the global address of the mobile access router (Fig. 11, #1102, [0027], lines 1-14, [0048], lines 1-4, wherein the mobile node does not know mobile router's address and sends a router solicitation message asking for information about the mobile router it is attached), and

a response information sending means for sending response information including the global address of the mobile access router to the mobile node which has sent the information through the local fixed router in order to inform the global address of the mobile access router when the information is detected by the information

detection means (Fig. 11, #1104-1106, [0048], lines 4-9, [0049], lines 1-6, wherein in response to the router solicitation received from the mobile node, the mobile router informs the mobile node of the home address of the mobile router in a router advertisement message).

Venkitaraman does not expressly teach that a local fixed router attached to the mobile network relays information between the mobile router and the mobile node.

Janneteau teaches that nodes belonging to the mobile network include mobile router, local fixed nodes (host or router) and local mobile nodes and local fixed outer relays information between the mobile router and the mobile node (Fig. 1, #135, #165, Fig. 6, #235, #652, #657, col. 2, lines 10-14 and 35-37, col. 9, lines 35-44).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention to include a local fixed router in the mobile network to manage the mobility of the node that does not change its point of attachment to the mobile network (Janneteau, col. 2, lines 10-14).

Regarding claims 14 and 29, Venkitaraman teaches a dynamic network management apparatus placed in a mobile node connected to a mobile access router forming a mobile network (Fig. 1 #110-116, [0009], lines 4-13, wherein the mobility management responsibility is placed in the mobile node attached in a mobile network formed by a mobile router), comprising:

a receiving means for receiving information including a global address of the mobile access router (Fig. 1, #102-106, Fig. 11, #1106, [0045], lines 5-9, [0048], lines 4-

9, [0049], lines 1-6, wherein the mobile node receives the home address of the mobile router), and

an information storing means for storing the global address of the mobile access router received by the receiving means ([0022], lines 1-15, [0029], lines 1-11, [0049], lines 4-8, wherein the mobile node maintains binding information including the home address of the mobile router received from the mobile router).

Venkitaraman does not expressly teach that a local fixed router attached to the mobile network relays information between the mobile router and the mobile node.

Janneteau teaches that nodes belonging to the mobile network include mobile router, local fixed nodes (host or router) and local mobile nodes and local fixed outer relays information between the mobile router and the mobile node (Fig. 1, #135, #165, Fig. 6, #235, #652, #657, col. 2, lines 10-14 and 35-37, col. 9, lines 35-44).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention to include a local fixed router in the mobile network to manage the mobility of the node that does not change its point of attachment to the mobile network (Janneteau, col. 2, lines 10-14).

Regarding claims 7, 22, 35 and 41, Venkitaraman further teaches a forwarding means for forwarding a packet with the information to a determined destination set in the packet (Figs. 5 & 7, #112, #116, [0036], lines 10-15, [0041], lines 8-10).

Regarding claims 11, 26, 37 and 43, Venkitaraman further teaches an information embedding means for embedding the information in a packet header of a

Binding Update message sent to a predetermined communication apparatus, and being so arranged that the sending means sends the packet of the Binding Update message which the information is embedded by the information embedding means ([0006], lines 6-10, [0029], lines 1-7, [0045], lines 12-15, wherein the mobile node sends a Binding Update message to its home agent and correspondent nodes and the Binding Updating message includes binding information).

Venkitaraman does not expressly teach embedding the information in the packet header of a Binding Update message.

Janneteau teaches that the IP source address of the VMN care-of address and an IP destination address for the correspondent node are included in the header of the Binding Update message (Fig. 27, #2725, col. 14, lines 53-59).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention with teachings from Janneteau to embed address information in the header of the binding update message to facilitate the delivery of the BU message.

Regarding claims 15 and 30, the combination of Venkitaraman and Janneteau teaches the limitations of claims 14 and 29.

Venkitaraman does not specifically teach informing a node which is connected behind the local fixed router about the global address of the mobile access router.

Janneteau further teaches that the local fixed router informs all nodes within (below) its own link about the global address of the mobile router (Fig. 6, #235, #675, col. 9, lines 35-44).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Venkitaraman invention with teachings from Janneteau to have the LFN informing a node behind itself to make the mobile nodes aware of the mobility of the mobile network there are attached to (Janneteau, col. 8, line 65 through col. 9, line 1).

Regarding claims 16 and 31, Venkitaraman further teaches:

a determination means for determining whether the information received by the receiving means is sent from a default router of the mobile network or not ([0047], lines 1-8, [0048], lines 1-4, wherein the mobile node solicits the default mobile router in the mobile network it is attached), and

a store controlling means for controlling such that the global address of the default router is stored in the information storing means only when the determination means determines that the information is sent from the default router ([0048], lines 4-9, [0049], lines 1-8, wherein the mobile receives and uses the home address of the mobile router as its care of address).

Regarding claims 17 and 32, Venkitaraman further teaches that the information received by the receiving means is a router advertisement message of the mobile access router ([0048], lines 4-9, [0049], lines 1-6).

Regarding claims 18 and 33, Venkitaraman further teaches that the informing means informs the node using a router advertisement with the global address of the mobile access router ([0048], lines 4-9, [0049], lines 1-6).

5. Claims 6, 21, 34 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venkitaraman in view of Janneteau and Korus, Michael F. et al. (US 6,721,297, hereinafter Korus).

Regarding claims 6, 21, 34 and 40, the combination of Venkitaraman and Janneteau teaches that limitations of claims 4, 19, 5 and 20, but fails to teach an information deleting means for deleting the information from a packet with the information when the information is detected by the information detection means, and a forwarding means for forwarding the packet which the information has been deleted by the information deleting means to a predetermined destination set in the packet.

Korus teaches that the mobile router replaces the IP destination identified in the router header extension and removes the router header before forwarding the packets to the mobile network hosts (col. 9, lines 12-17).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention with teachings from Korus to enable removing of information from a packet before forwarding to ensure appropriate routing of the packets.

6. Claims 8, 23, 36 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venkitaraman in view of Janneteau and Watanabe, Fujio et al. (US 7,020,440, hereinafter Watanabe).

Regarding claims 8, 23, 36 and 42, the combination of Venkitaraman and Janneteau teaches that limitations of claims 4, 19, 5 and 20, but fails to teach a dropping means for dropping a packet with the information.

Watanabe teaches that without any support, the access router or foreign agent in the subnet X drops the packet which is destined to the mobile terminal with an invalid IP address (col. 1, lines 30-37).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention with teachings from Watanabe to drop a packet with the invalid information to ensure proper packet delivery.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakatsugawa, Keiichi et al. (US 7,136,365)

Thubert, Pascal et al. (US 7,203,175)

Leung, Kent K. (US 7,352,731)

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YONG ZHOU whose telephone number is (571)270-3451. The examiner can normally be reached on Monday - Friday 8:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag G. Shah can be reached on 571-272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yong Zhou/
Examiner, Art Unit 2477

June 2, 2010